# DRIVER

JULY 1984

## A DIFFERENT VIEW

MINI COMPACTS
MAX SAFETY

A SHORT QUIZ on SEAT BELTS and CHILD RESTRAINTS

## Are YOU putting me ON?

DRIVER

**Contrary to some opinions,** expectant mothers *should* wear safety belts in automobiles. The belt should be worn low across the hips and below the "bulge" (that is, the baby), with the shoulder harness snug to prevent "jackknifing."

# Are YOU putting me ON?

## A Short Quiz on Safety Belts and Child Restraints

Around 50,000 people die each year in motor vehicle accidents in this country. That's an average of 137 people daily, the equivalent of a passenger jet crashing every day.

Automobile accidents are the leading cause of death among people under age 45. The use of seatbelts could reduce this problem dramatically, yet only a small minority of the population buckles up regularly. The following quiz is designed to present some facts you might find informative, and perhaps surprising.

**1. (True or False)** Safety belts aren't necessary when taking short trips at low speeds.

**2. (True or False)** About 80 percent of all automobile accidents occur at speeds of less than 40 mph.

**3. (True or False)** The longer the trip, the more likely it is that people will use safety belts.

**4. (True or False)** One in 10 injury-producing crashes involves fire or submersion in water.

**5. (True or False)** In a crash, it's almost always safer to be thrown out of the car.

**6. (True or False)** Safety belts should be fastened just above the hip bones (pelvis).

**7. (True or False)** If people wear a lap belt, they don't need a shoulder belt, too.

**8. (True or False)** If you have an adjustable shoulder belt, it should be kept very loose for the best protection.

**9. (True or False)** Drivers wearing lap and shoulder belts have more control over the car in emergency situations.

**10. (True or False)** Over 90 percent of drivers think safety belts increase safety, but only 70 percent wear them regularly.

**11. (True or False)** An adult's arms provide the best protection for a very small baby.

**12. (True or False)** Pregnant women should not wear lap and shoulder belts.

**13. (True or False)** Regular safety belts should never be worn by children under five years of age.

**14. (True or False)** If the label on a child restraint device says it "meets or exceeds federal safety standards," it is a good one.

**15. (True or False)** A common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts.

**16.** Safety belts cut your chances of being killed or seriously injured in the event of a crash by about ____ 10%, ____ 30%, ____ 60% or more.

**17. Safely-constructed** child restraints can reduce the probability of death in the event of a crash by about ____ 10%, ____ 50%, ____ 90% or more.

## ANSWERS

**1.** Safety belts aren't necessary when taking short trips at low speeds.

**FALSE**

Many people believe they are very safe

*continued*

**(left)**
**Usually it's a better idea** to have a small child in a safety seat than in a regular seatbelt. However, if no child seat is available, the belt is better than nothing. Make sure the belt is snug and positioned over the hip bones.

THE TRAFFIC SAFETY MAGAZINE FOR THE MILITARY DRIVER

# DRIVER

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continued

**Although many, many parents** hold their infants in their arms in the car, this is unwise. Crash forces are so great that nobody can hold onto even the smallest infant in an accident.

**Without a belt** on the adult, if an accident occurs, the baby will be torn from its parent's grasp and then crushed by the adult's body as the adult is thrown about.

when driving just to the store, the school, or to a friend's house. They do it all the time, and think nothing will ever happen. But a crash or collision can happen at any time or place. All it takes is one driver not paying attention, losing control, or taking an unnecessary risk. Three out of four crashes happen within 25 miles of home.

No one ever starts out in the morning expecting to be in a crash, but it does happen.

How many of you have had a "close call" in the last few weeks?

**2.** About 80% of all automobile accidents occur at speeds of less than 40 mph.

**TRUE**

Nearly eight out of 10 crashes happen at speeds less than 40 mph. That's largely because most driving is done at low speeds and in urban areas. Driving at low speeds is no guarantee that you won't be hurt in a crash, however. People not wearing safety belts have been fatally injured in crashes at speeds as low as 12 mph. That's about the speed you would be driving in a parking lot.

No matter how slow you might be driving or how far you might be going . . . you're a lot safer buckled up.

**3.** The longer the trip, the more likely it is that people will use safety belts.

**TRUE**

People are more likely to use safety belts on long trips. They seem to think there is a greater risk of having an accident when driving far from home on unfamiliar roads. But the reverse is really true. Long trips, especially on freeways,

*continued*

tend to be safer. Everyone should wear belts on all trips, short or long.

**4.** One in 10 injury-producing crashes involves fire or submersion in water.

**FALSE**

If you watch television, you probably think cars explode and drop into rivers all the time. But that's just not what happens in real life. Less than one out of every 200 injury-producing crashes involves fire or submersion in water.

But suppose this does happen to you. Then a safety belt can save your life by keeping you unhurt, alert, and able to escape quickly.

Without a safety belt, you easily can be stunned or knocked unconscious in even a minor crash. Then how will you escape?

**5.** In a crash, it's almost always safer to be thrown out of the car.

**FALSE**

The fact is that your chances of being fatally injured are almost 25 times greater if you're thrown from the car than if you are safely buckled to your seat.

Why? Because it's not easy to get out of the car. You have to go through the windshield or the side windows . . . and that's going to hurt! Once you are out of the car and sailing through the air, you face your next problem . . . your landing spot. But without wings, you really don't have a choice.

So how will safety belts help you? They will hold you snugly in your seat so that you don't:

- plunge through the windshield;
- smash into trees o rocks or other cars;
- scrape along the ground or the pavement; or
- get run over by your own or another car.

**6.** Safety belts should be fastened just above the hip bones.

**FALSE**

A lap belt is designed to be worn as low as possible across the hip bones, so these strong bones can absorb safely the forces of a crash. If the belt is fastened above the hip bones . . . across the abdomen . . . it could cause injury to soft tissue or organs in a severe crash.

**7.** If people wear a lap belt, they don't need a shoulder belt, too.

**FALSE**

The purpose of a shoulder belt is to keep your upper torso from jackknifing forward in a collision and hitting the dashboard or the steering wheel with your chest and face. A lap belt will hold you in your seat and save your life, but the shoulder belt can prevent some very painful and disfiguring injuries.

Never wear a shoulder belt by itself. You will slide under it in a crash and suffer serious injury. The combination of lap and shoulder belts working together provides the greatest protection in a crash.

**8.** If you have an adjustable shoulder belt, it should be kept very loose for the best protection.

**FALSE**

Cars manufactured after 1974 are equipped with combination lap-shoulder belts which are self-adjusting. But if you have an older model vehicle, your shoulder belt probably must be adjusted separately. It should be slightly loose . . . allowing you to put your clenched fist between the belt and your chest. This will give you some freedom of movement in the car, yet will be snug enough to prevent your upper body from hitting the steering wheel or the dashboard.

**9.** Drivers wearing lap and shoulder belts have more control over the car in emergency situations.

**TRUE**

If you have to swerve suddenly to avoid a crash, your safety belts will hold you in your seat so that you can concentrate on steering. Without belts, it is likely you could be thrown out of your car seat or at least slide so far that you could not keep control of the car. Ever hear of a race car driver who doesn't use safety belts? In fact, professional racing associations require the use of safety belts by all drivers, just like they require helmets and other safety devices.

**10.** Over 90% of drivers think safety belts increase safety, but only 70% wear them regularly.

**FALSE**

More than 90% of all motorists do believe that safety belts are a good idea in one or more situations. In practice, however, only about 11% of drivers can be observed wearing their belts. Of children who ride in motor vehicles, barely 8% are restrained in any way.

**11.** An adult's arms provide the best protection for a very small baby.

**FALSE**

In only a 30 mph crash, a 15-pound baby can suddenly weigh as much as 450 pounds. No matter how strong you are or how much warning you have, there is no way in the world you can hold on to a baby in a crash. If this happens, the baby will hit the dashboard with the force of a fall from a three story building. Then, if you don't have on your safety belts, you will crash into the child. The only way to protect a small baby from injury in a crash or even a sudden stop or swerve is to carry it in a specially designed infant car seat.

**12.** Pregnant women should not wear lap and shoulder belts.

**FALSE**

The greatest cause of fetal death in auto accidents is death of the mother, so her survival must take priority. A lap belt worn below the "bulge" and a shoulder belt above, to prevent jackknifing, will give both mother and fetus the best chance of surviving a serious accident.

**(right)**
**Some people dislike** the feel of the shoulder strap so much that they sling it under one arm rather than over the chest. This defeats the purpose of the shoulder harness, which is to keep the occupant's face away from the steering wheel, dashboard and windshield.

**13.** Regular safety belts never should be worn by children under five years of age.

**FALSE**

This was a little tricky because many people have heard that safety belts can be dangerous to young children. Well, young children always are safer if they can ride in a special child restraint device that will spread the forces of a crash over a wide body area. But if such a restraint device is not available, then a safety belt is much better than being unrestrained. Just make certain the lap belt is as snug as possible and is positioned low on the hip bones.

**14.** If the label on a child restraint device says it "meets or exceeds all federal safety standards," it is a good one.

**TRUE**

Since Jan. 1, 1981, the federal standard governing child safety seats has required dynamic testing. This limits forces placed on the child's body and ensures the safety of the structure of the CR. All seats that meet this standard can be considered good ones.

Some CRs manufactured prior to Jan. 1, 1981, can meet these requirements, while others cannot.

**15.** A common cause of death and injury to children in automobiles is being crushed by adults who are not wearing safety belts.

**TRUE**

This is something about which most people have never thought. When they try to visualize a crash, they see a car hit something head-on and the people lurch forward. In real life, however, cars collide at all angles and the passengers are thrown in every conceivable direction . . . unless they are safely buckled-up and anchored to the vehicle seat. One out of every four serious injuries occurring to passengers of motor vehicles is caused by people being thrown into each other.

The most common causes of death and injury to children in automobile crashes are:

*continued*

continued

- being thrown into the windshield, dashbord, or some other part of the vehicle;
- being crushed by adults who are not wearing safety belts, and
- being thrown out of the car.

**16.** Safety belts cut your chances of being killed or seriously injured in the event of a crash by about ____ 10%, ____ 30%, ____ 60% or more.

**60% OR MORE**

This is a very conservative estimate. Some studies have shown the effectiveness of safety belts to be well beyond 80%. Naturally, the lap-shoulder combination gives better protection than just a lap belt.

**17.** Safely constructed child restraints can reduce the probability of death in the event of a crash by about ____ 10%, ____ 50%, or ____ 90% or more.

**90% OR MORE**

For the last several years, the Highway Safety Research Institute at the University of Michigan has been investigating all crashes involving young children who were riding in child restraint devices in the southeast Michigan area. Not a single child who was restrained was fatally injured.

An eight-year study in the state of Washington found that when children were restrained, deaths were reduced by 90 percent and serious injuries were reduced by 67 percent.

A final figure you might want to know is that more than 4,200 children under five were reported as injured in auto crashes in Michigan in 1977. Many more were injured in sudden stops or swerves, but their injuries were not reported to police. Find out about how these figures compare in your state.

There is nothing more tragic than a child permanently disfigured or handicapped when the injuries could as easily have been prevented by a child restraint device or a safety belt.

**These two have decided** on the "democratic method," allowing each person to make up his/her mind about using the belts. However, in an accident the unrestrained passenger would not only be injured or killed, but she could also injure the driver as she was thrown about.

**The shoulder harness** should be kept snug against the chest (though not *tight*). As loose as this woman is wearing it, she would go straight for a mouthful of glass.

**This is *not*** where to adjust the seatbelt. Across the abdomen like this, she could suffer injuries from the belt during a crash. The proper position for the belt is low across the pelvis. The strong hip bones can help absorb the crash forces safely.

*Editor's note: Attempts by U.S. service members and others to import automobiles from foreign countries causes them much grief and annoyance each year. Often they lose these vehicles completely because of costs involved in bringing their cars into compliance with U.S. regulations. The following article contains the latest figures available, from 1983.*

Approximately 6,000 people tried to import motor vehicles into the United States during 1982 but could not because they failed to comply with Federal Motor Vehicle Safety Standards according to the Department of Transportation.

The department's National Highway Traffic Safety Administration said the vehicles, which were admitted conditionally under bond by the U.S. Customs Service, ran the gamut from exotic Italian sports cars to Chinese motorcycles. Costly and time-consuming alterations were often needed to bring these vehicles into apparent compliance with the Federal Motor Vehicle Safety Standards.

The National Traffic and Motor Vehicle Safety Act requires that all motor vehicles, new or used, manufactured since Jan. 1, 1968, conform to federal safety standards in effect on their date of manufacture if they are to be imported permanently into the U.S.

NHTSA said some people go on overseas vacation trips and buy a car on impulse. Other Americans buy cars while serving overseas in the military, or while working or studying abroad, and desire to bring them home when they return. Still others seek cars, trucks, or motorcycles of unique design or low price, but many of the vehicles have one characteristic in common: they were not intended for use in the U.S.A.

The U.S. Customs Service requires an importer to post a bond in the amount of the value of the nonconforming vehicle, plus duty. Failure to submit documentation within 120 days indicating that the vehicle has been brought into conformity makes the importer liable for a fine up to $1,000 and forfeiture of the bond.

NHTSA said that some people find it economically impossible to do anything but export or scrap their vehicles after they realize how expensive the proper modifications can be.

NHTSA can advise consumers which standards a vehicle must meet based on its year of manufacture, but it cannot advise them on the modifications necessary to bring any specific model vehicle into conformity. Vehicles not certified for the U.S. market by their original manufacturer can vary even within a model line, depending on manufacturing options available within the country of origin. Because federal safety requirements are performance standards, each manufacturer has a latitude of choice in determining how to design his vehicle to achieve the level of performance required by the U.S. Government. No two makes of motor vehicles will be designed and manufactured to conform in exactly the same manner.

The best evidence of original comformity with U.S. safety requirements, NHTSA said, is the original manufacturer's certification label. Attached to the vehicle, it certifies compliance with the standards and shows the month and year of manufacture and the vehicle Identification Number.

If a vehicle lacks this label, importers may bring their cars, trucks or cycles into the U.S.A. if the vehicle —

**1. Was manufactured before Jan. 1, 1968, or motorcycle Jan. 1, 1969;**

**2. Will be brought into conformity with the safety standards within 120 days;**

**3. Is in transit for export;**

**4. Is imported pursuant to NHTSA's approval under circumstances indicating that it will never be used on the public roads or, if used, operated under a test plan or controlled conditions such as sanctioned competition racing;**

**5. Was not manufactured primarily for use on the public road such as a golf cart; or**

**6. Is an incomplete vehicle.**

Vehicles not bearing the certificate of compliance may also enter the U.S.A. if the importer is not a U.S. resident and will not use the vehicle for more than one year, or a member of a foreign government's armed forces or embassy staff, or is employed by a public international organization.

NHTSA has a booklet entitled "Federal Motor Vehicle Safety Standards and Procedures for Customs Declaration and Certification of Imported Motor Vehicles" which is available free of charge. It is highly recommended for anyone contemplating importation of any vehicle less than 15 years old.

Copies may be obtained by writing to: National Highway Traffic Safety Administration, NAD-42, 400 Seventh Street, S.W. Washington, D.C. 20590 or by calling toll free, (800) 424-9393. Please ask for publication number DOT HS 805674.

Federal regulations concerning emission control devices required on imported motor vehicles are the responsibility of the Environmental Protection Agency, 401 M Street, S.W. Washington, D.C. 20460.

# Crash Test results on 1984 models

So far this year the National Highway Traffic Safety Administration (NHTSA) has released the results of 23 crash tests involving 1984 motor vehicles. The test results are part of NHTSA's experimental New Car Assessment Program. Results of crash tests of 15 other 1984 vehicles are expected to be released by this summer.

All the vehicles were crashed at 35 miles per hour into a fixed barrier in frontal tests designed to indicate relative levels of occupant protection and vehicle safety performance. This is five mph faster than the prescribed speed for compliance with federal motor vehicle safety standards.

NHTSA said that while the test results are indicative of relative crash protection provided to occupants wearing safety belts, it is important to emphasize that, in the government crash test program, only one car of any given make and model is crashed in a specific test. Subsequent crash test results for any vehicle could vary because of differences in the way cars are manufactured and equipped or due to slight variations in test conditions.

Instrumented dummies are used in all tests, and they are protected by the vehicles' standard safety belt system. The head, chest and upper legs of the dummies are equipped with instruments which monitor impact forces and accelerations. The head acceleration is used to calculate the head injury criteria (HIC), a measure of the potential for head injury.

In general, the lower the HIC, the less likely drivers and front-seat passengers would be seriously injured or killed in a frontal crash at 35 mph. A HIC value of 1000, a chest deceleration of 60 G's (G is a unit of acceleration), and a femur (thigh) load of 2250 pounds also indicate approximate thresholds above which more serious injuries are expected.

Other safety performances also are monitored in the test, including whether the vehicles retain the windshield during the crash (Standard No. 212), and maintain the integrity of the entire fuel system to prevent leakage of fuel in a crash (Standard No. 301).

Of the 23 vehicles tested so far this year, 22 have passed the 212 standard. The Jeep CJ-7 was not tested against the 212 standard because multipurpose passenger vehicles aren't required to meet FMVSS 212. Only the Mercury Cougar two-door coupe failed the 301 standard.

The experimental New Car Assessment Program began in 1979. The program is intended to provide a relative comparison, within the same size class, of the crashworthiness and safety performance built into new production vehicles. The agency is continuing to examine several aspects of the program such as the variability in test results, and the relationship of these tests to real world accidents, in order to improve crashworthiness information provided to consumers.

The accompanying chart shows the test results for the 23 1984 models tested so far.

# CRASH TEST results

| VEHICLE | DRIVER/PASSENGER | | | | |
|---|---|---|---|---|---|
| | Test Speed/ Weight | HIC | Chest Resultant | Femur Loads Driver left/right | Femur Loads Passenger left/right |
| AMC CJ-7 Jeep 2-Dr MPV | 35.1/3180 | 460/440 | 46/49 | 1730/860 | 520/750 |
| Chevrolet Cavalier 2-Dr Convertible | 35.0/3110 | 884/401 | 43/29 | 780/850 | 380/440 |
| Chevrolet Celebrity 4-Dr Station Wagon | 35.0/3590 | 518/440 | 31/28 | 635/270 | 580/500 |
| Chevrolet Corvette 2-Dr Coupe | 34.7/3680 | 784/525 | 40/32 | 730/560 | 670/650 |
| Chevrolet C-10 Pickup Truck | 35.2/4830 | 534/514 | 37/39 | 2026/353 | 543/290 |
| Dodge Daytona 2-Dr Hatchback | 35.4/3000 | 507/566 | 37/40 | 740/860 | 950/530 |
| Ford LTD 4-Dr Station Wagon | 34.6/3680 | 646/647 | 58/67 | No Data | 1850/590 |
| Ford Tempo 4-Dr Sedan | 35.0/3080 | 2955/1104 | 63/45 | 750/480 | 675/370 |
| Honda Civic 2-Dr Hatchback | 35.4/2311 | 563/846 | 37/43 | 1067/602 | 1566/1275 |
| Honda Civic 4-Dr Station Wagon | 34.9/2510 | 586/544 | 43/32 | 1600/530 | 1155/820 |
| Honda Civic CRX 2-Dr Coupe | 35.1/2310 | 571/959 | 34/34 | 2850/1975 | 1970/1880 |
| Mercury Cougar 2-Dr Coupe | 34.9/3560 | 652/577 | 55/37 | 850/1330 | 1180/945 |
| Nissan 300SX 2-Dr Coupe | 35.0/3370 | 789/1038 | 45/39 | 1140/2085 | 720/1775 |
| Nissan Stanza 4-Dr | 35.2/2814 | 1459/2216 | 58/53 | 197/714 | 706/536 |
| Oldsmobile Cutlass 2-Dr Coupe | 34.8/3700 | 781/1074 | 40/35 | 1500/790 | 450/525 |
| Plymouth Colt Vista 4-Dr Station Wagon | 35.4/2980 | 1530/1004 | 71/45 | 2950/450 | 640/830 |
| Plymouth Conquest 2-Dr Coupe | 35.3/3170 | 1118/1035 | 57/43 | 410/360 | 180/320 |
| Pontiac 1000 4-Dr Hatchback | 35.3/2746 | 1886/1306 | 42/57 | 2512/298 | 311/663 |
| Pontiac Fiero 2-Dr Coupe | 35.1/3000 | 309/356 | 31/30 | 850/840 | 740/800 |
| Pontiac Parisienne 4-Dr Sedan | 34.9/4140 | no data/1055 | 52/48 | 540/180 | 495/465 |
| Renault Encore 4-Dr Hatchback | 34.9/2600 | 912/1045 | 63/49 | 248/810 | 980/268 |
| Toyota Corolla 2-Dr Coupe (rear-wheel-drive) | 35.0/2680 | 432/602 | 37/47 | 1100/450 | 580/300 |
| Toyota Corolla 4-Dr Sedan (front-wheel-drive) | 34.9/2610 | 630/611 | 41/42 | 1320/730 | 340/3955 |

# St. James on...
# STREET DRIVING

It isn't often that people can receive driving instruction from a professional and it isn't often that the instructor is a female race driver. But that's just what people in 20 cities got recently when Lyn St. James conducted a car clinic and driving skills program. Two of the clinics were held at Norton and March Air Force Bases.

A six-year veteran, St. James is the top female race driver in North America. She placed tenth in the Trans-Am Championship series in 1983, her rookie year in that series. She was fifth in the 1983 Sebring 12-Hour race and was the top Woman Driver in the Kelly American Series in 1979, 1981, and 1982.

Sponsored by Ford Motor Company, the car clinics are designed to give attendees information on a variety of topics, including car maintenance, buying a new car and getting good service, as well as defensive driving techniques.

She had some key points that are often overlooked:

Driver comfort is important to safe driving. Adjust the seat so that the arms are slightly bent when the hands are on the wheel and the legs are still slightly bent when the pedals are fully depressed.

Wear the seatbelt so that you become one with the car.

Adjust the mirrors each time you get in the car. Watch for cars in your blind spot and stay out of the blind spots of other drivers.

Glance at the gauges every once in a while and make it a habit. This will keep you aware of the car's performance.

Put your concentration into your driving instead of other matters like home and the job.

On multi-lane highways, watch the front wheels of the other cars. They will give you advance warning on what the driver is going to do.

To avoid hydroplaning in wet weather, be aware of the other cars. If a car ahead doesn't leave tracks in the water, hydroplaning is a possibility. Slow down on turns to limit the hazard of hydroplaning.

The driving part of the car clinic gave the attendees a chance to test their driv-

**Lyn St. James discusses** the driving course with some military and dependent attendees.

**(left)**
**Lyn St. James pilots** a small Ford EXP through the skills course.

**An important point.** Lyn St. James says that the action of buckling the seatbelt makes you "one with the car."

**"This course** is designed to make you think." Lyn St. James explains the layout of a driving course that is simple but provides a good test of driving ability.

**The skills course** is a series of pylons and involves driving through straights, curves and backing situations.

ing ability. The skills course involved driving through a series of pylon gates. It was designed to test the driver's ability to maneuver a car more than the ability to drive fast. It included turns, straights and backing maneuvers.

"The main objective here is to encourage everybody to get in the car, try their skills a little bit and concentrate on their driving," St. James said.

She compared the course with street driving. "The main difference here is you've only got one car to deal with; you don't have any other traffic. But it's still a case of learning the limits — not the limits of the car, but learning where the car is in relation to where you want it to go.

"A lot of people have a sense of just this square box around them rather than projecting ahead," St. James said. "If you look ahead, and do that well here (on the course), you'll be a better driver on the highway. You'll feel that you can maneuver your car to avoid an accident. You'll see ahead instead of just almost being a passenger in the car, which a lot of people do. They get in the car, plug it into drive and steer it, but they aren't really driving it.

"They weave for no apparent reason. This course is to tighten up that relationship between the car and the driver, and to make you think," St. James said

# Two Out of 10 Ain't Bad

Having just finished reading "The Six Stages of Crashing" by Bill Stermer in the July 1984 *Road Rider* we decided to look around and see what we could come up with as a first person type story about a motorcycle accident. As Stermer had walked (hobbled) away from his spill we decided we needed an accident where the rider wasn't so lucky. At first we were going to ask SMSgt. Carl Spurgeon, the local motorcycle expert (read Motorcycle Safety Foundation chief instructor), but then we remembered Carl has nearly half a million accident-free miles to his credit; so he was out as a source. Needless to say we had trouble locating a willing victim, until we remembered that one of our own staff members walks with a good limp when the weather changes. Here's what he had to say, although he really didn't want us to put his name on the story.

Even though it was 13 years ago some of the day's events are as clear in my mind as if they were happening right now, other things that happened that Saturday aren't too clear at all.

We were at Phil and Rosemary's to grill some steaks. I don't remember whether we ever ate the steaks or not. I am, however, reminded by Rosemary of the day's events whenever I see her. She always asks, "Do you want to come over for some steak, baked potatoes that aren't done and a motorcycle ride?" Her joke was that the potatoes never did finish baking.

Anyway, we all have friends like Phil, somebody we palled around with in high school. After high school, he went into the Air Force while we tried college until the draft motivated us into the Air Force. When we got out of the Air Force, this good friend got us a job where he worked.

On this early-June Saturday, Phil had a new Suzuki 500 he wanted to show off. After a two-up demonstration, Phil suggested that I take it out myself. Having been around motorcycles for almost 10 years at that point, I didn't wait for a second offer — in fact, I hadn't even taken off my helmet from the demonstration ride.

I motored at a residential 25 mph up the esse-bent street past the new homes under construction to a major country two-lane highway. Left at the stop sign and a quick acceleration up to 45 or so, before coming to the intersection where a left would have led me back to Phil's. I don't recall if this was a four-way stop, or if I could have gone straight through the intersection without stopping.

Either way, I didn't take the left turn and the easy route back. Instead of this boring route, I went on another country mile, accelerating to 60 or 70 mph. After turning left at the convenience store I had another mile or so before the road got more exciting.

At that point the road began a long series of esse bends that followed the path cut by a river. I'd traveled the road many times in four-wheel vehicles and knew every inch of its surface "like the back of my hand."

Now, for those of you who aren't road racing fans, let me explain that there are only three basic types of turns. The first is a turn that leads onto a straightaway. The second is at the end of the straight. And the third is any turn that isn't the first or second type. For road racers the most important type of turn is the first. How they take that type of turn determines their speed down the following straight. The faster they take the first type corner, the faster they go down the straight.

With that in mind, there I was playing "Ronnie-Road-Racer" on a borrowed bike at about 70 mph into the turns that I had taken at better than 80 many times in a four-wheeler. Now the last turn in this series is tighter than the rest and required just the right touch to get correct for the following straight section.

So there I was barreling along at 70 mph thinking about a turn seven bends ahead and I hadn't even taken the first of the esses yet. In the road racing trade this is called "Brain fade."

By the time I realized that I hadn't attempted the first turn the bike and I were already on the grass. There was no shoulder to the road because it followed the natural terrain of the land and at this point the earth dropped about 100 feet away down to the river that cut the path.

While it wasn't a cliff, the ground still fell away more rapidly down than horizontal.

The motorcycle landed on both wheels,

but not for long. The weight of the machine with the contribution of the high speeds with which it — and I — left the road combined into a force that started bending and breaking wheel spokes rapidly. When enough spokes gave up under the strain, the wheel folded and the front fork dug into the steeply slanted ground.

That's probably when I left the machine. I don't remember. I do remember what I was saying at the time, but it's unfit to print.

When I came to, all was quiet. Very quiet. The only noises were those of the birds in the trees I was looking up at and the water running in the river somewhere down the hill.

I moved my eyes around not wanting to put any strain on my neck, having heard that neck injuries can be made worse by thrashing about.

I then started taking a mental inventory of how I felt. The left arm seemed OK. The right arm felt scratched, but otherwise OK. The left leg was damp at the ankle, while the right leg hurt at the ankle. Breathing was OK without chest pain and the helmeted head felt fine.

I was thinking it was going to be a long time before anybody found me. There was no way to see me from the road without actually getting out and looking. There were no houses nearby to have heard or seen anything. I didn't recall there being any cars on the road, so their having seen anything was out. I doubted if I left any tracks to be investigated. I was in for a long wait if I continued to lie there, or so I thought.

About this time I heard a voice above and behind me say, "Are you alright?"

My reply was a simple, "No."

"Would you like me to go for help?" he asked.

"Yes," I replied.

Then it was quiet again.

Later I would find out that my rescuer had stopped to work on his car at an intersection just before the esses started. He pulled onto the road just after I had passed. When he didn't see me on the road in front of him he suspected something was wrong. He said he knew I was going fast but not fast enough to have gotten far enough down the road to be out of sight. He decided to investigate.

It seemed like he was back in no time apologizing for having taken so long. I thanked him and said that it didn't seem like anytime at all to me.

He asked if there was anything he could do and I told him that if he could find my glasses I'd appreciate it and that my watch was also missing. It wasn't long and he laid them both on my chest, but I never saw him.

I could hear other people gathering at the edge of the road and asking the normal questions like, "Is he dead?"

Then I heard something coming down the hill. Not walking, but rolling. A tan blur went by on my right. It stopped not too much further down the hill. It turned out to be a sheriff's deputy who had lost his footing. He stood back up, brushed himself off and strolled back up to talk to me.

As we had our discussion about how I felt and what had happened, I could almost see him make a mental note to have my blood-alcohol level checked; apparently calm accident victims are rare.

Before he could finish his questions, he was displaced by the first of two medics. After a quick exchange of questions and answers, they put a bandage on the left ankle and an inflatable splint on the right.

As they were putting me on the stretcher, the deputy sheriff pulled a cable from the wrecker down the hill and attached it to a tree. That was so at least the two people on the left side of the stretcher would have something to hold onto while battling the footing to get me up the hill.

Just about the time we got to the top of the hill I heard Phil exclaim, "Look at my bike!"

I can't say that I blame him. After all, the bike had been brand new before he let me ride it. Besides, he's an old friend; I understood.

After I was loaded into the ambulance, my wife climbed in beside me for the ride to the hospital. The look on her face sort of said it all. I'm not really sure how one look can say, "I hope you aren't hurt too bad, but you did it big this time, dummy. And I hope you realize that the vacation we were supposed to start Monday was my vacation, too!" But it did, or at least that's what I read into it.

You can't see much riding in an ambulance except an occasional flash of the lights off a passing sign or pole. Another thing about ambulance rides: they seem to take forever. But they aren't nearly as long as the waiting once you get to the hospital.

You wait to be seen the first time. Then you wait for this test and that. Then you wait on a gurney in a hall someplace for x-rays. Then more waiting for more tests. Then you wait to be seen again, but you can't be seen until the test results and x-rays are back. You lose all track of time other than knowing that you've been waiting for a long, long time.

I was lucky. The right arm was scratched and burned from going through the fairing in short sleeves. A few ribs had been cracked, but nothing serious there. The right ankle was cracked, but the left one was shattered just below the joint. Both ankles would be OK (as long as I didn't want to win an Olympic gold medal in running) without any major repairs other than a simple walking cast for the left one.

There was, of course, a good chance of a concussion so I had to be watched closely through the night. Yet this was something my wife could do, so I could go home as soon as they got the cast on and the paperwork had been signed.

It was dark outside when we finally got out of the hospital. I'm not sure, but I think it was only 30 minutes past noon when I left for that short motorcycle ride.

When it comes to square-filling on accident reports, my short ride ranks right up there with the worst of them.

- Accident caused by motorcycle operator error
- Operator had NOT attended a certified hands-on motorcycle skills training program
- Mishap was the result of excessive speed
- Operator failed to negotiate a curve
- Mishap caused by improper or no braking
- Operator used a borrowed motorcycle

I was borderline on a couple of other classic motorcycle accident factors:

- Motorcycle engine larger than 500cc
- Operator under 25 years old

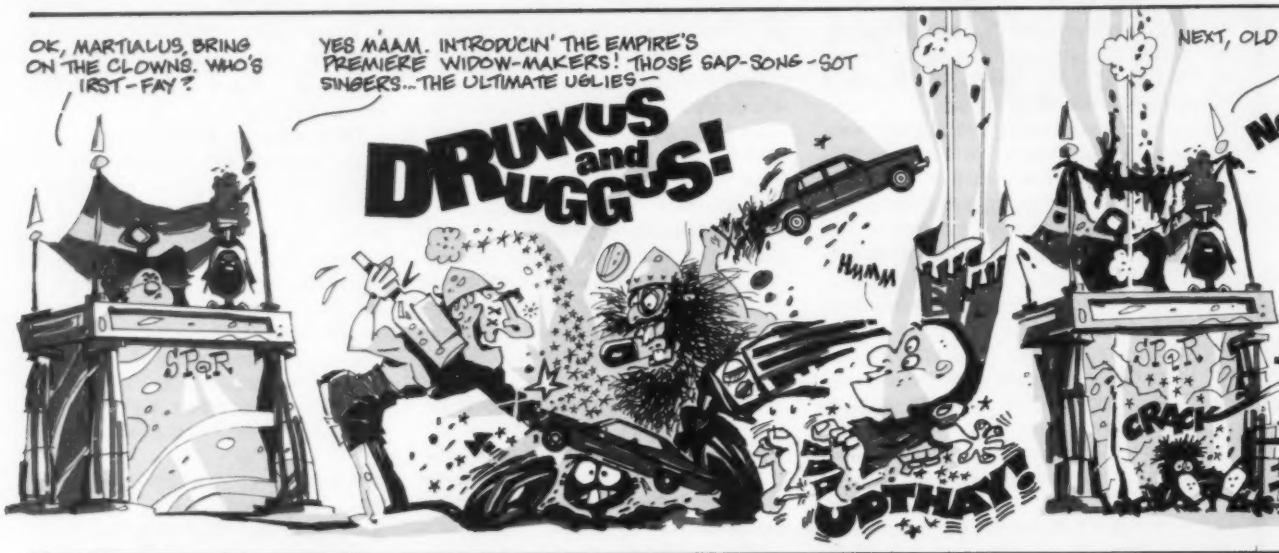
After all, I had been 25 for nearly six months before the accident.

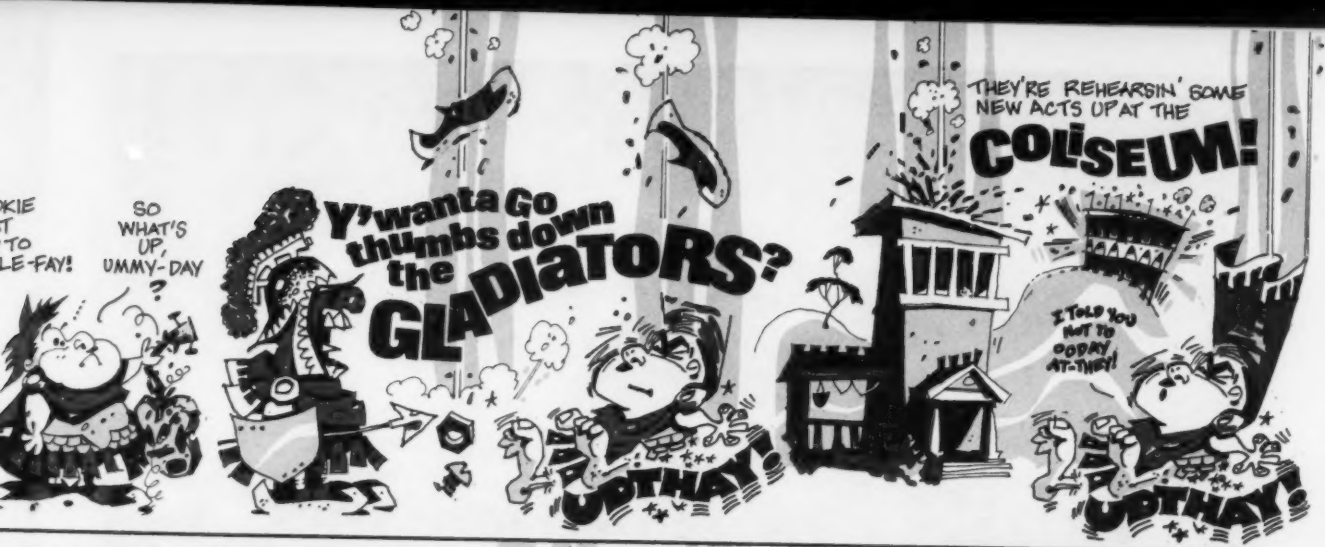
However, there were two areas where I didn't get check marks against me:

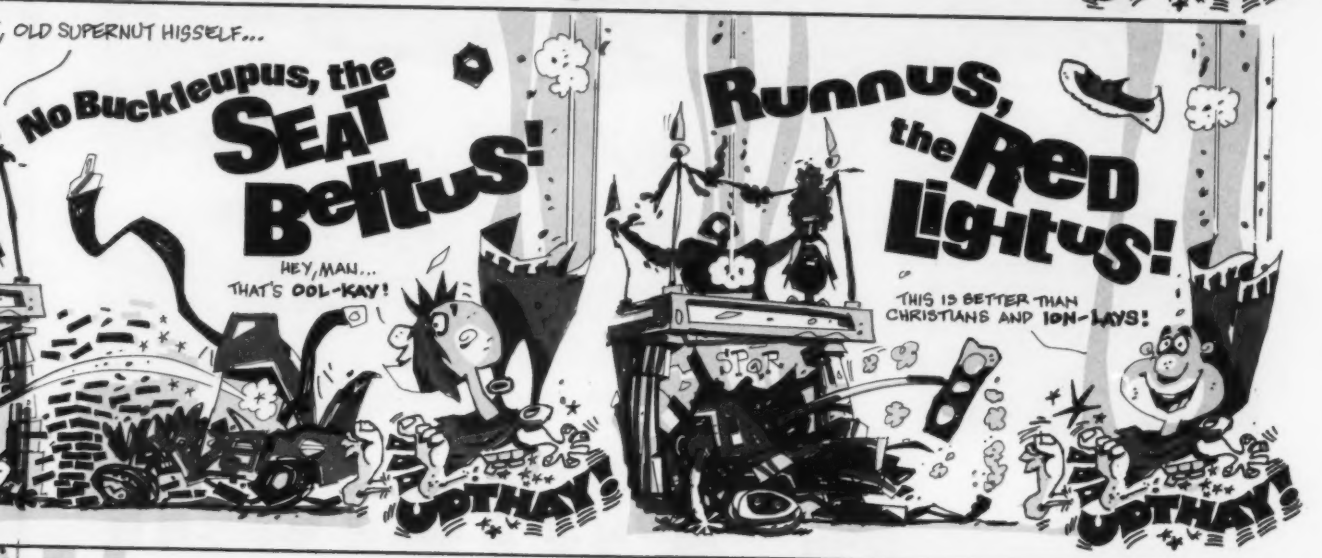
- Operator under the influence of alcohol
- Rider NOT wearing a helmet

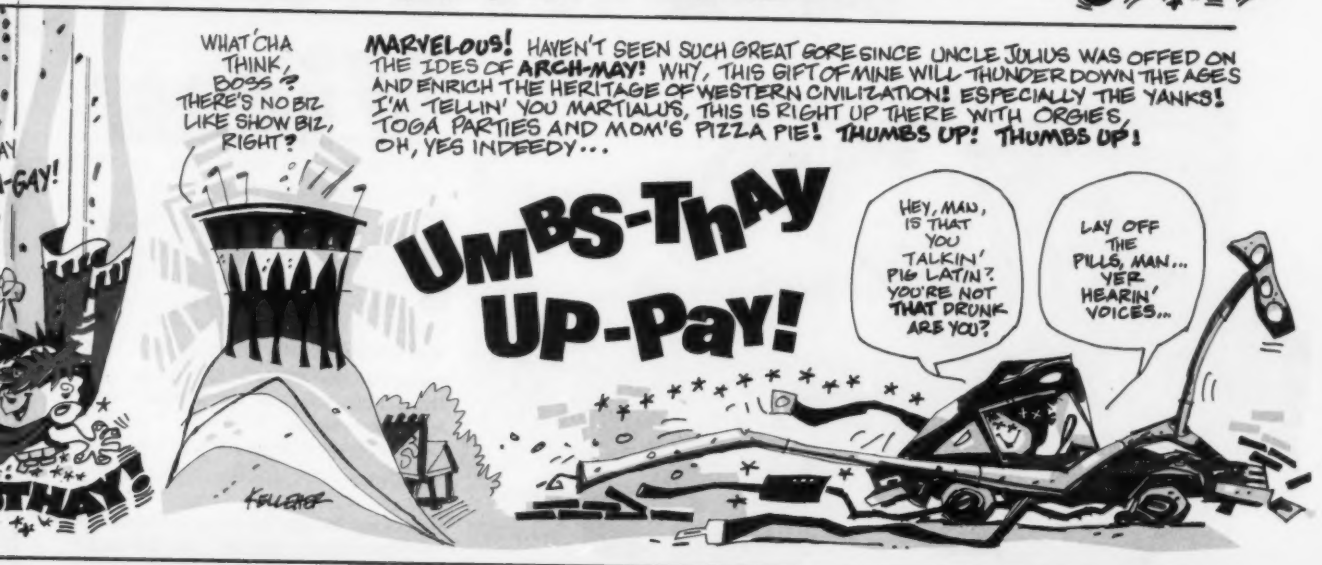
Two out of 10 ain't bad; is it?

## THANKS A LOT, NERO


OK, MARTIALUS, BRING ON THE CLOWNS. WHO'S IRST-FAY?
YES MAAM. INTRODUCIN' THE EMPIRE'S PREMIERE WIDOW-MAKERS! THOSE GAD-SONG-SOT SINGERS... THE ULTIMATE UGLIES—
DRUNKUS and UGGUS!
HUMM
NEXT, OLD
CRACK
UPTHAY!


SO WHAT'S UP, UMMY-DAY?
Y'wanta Go thumbs down the GLADIATORS?
UPTHAY!
THEY'RE REHEARSIN' SOME NEW ACTS UPAT THE COLISEUM!
I TOLD YOU NOT TO OODRY AT-THEY!
UPTHAY!


OLD SUPERNUT HISSELF...
No Buckleupus, the SEAT Belltus!
HEY, MAN... THAT'S OOL-KAY!
UPTHAY!
Runnus, the RED Lightus!
THIS IS BETTER THAN CHRISTIANS AND IDN-LAYS!
SPQR
UPTHAY!


WHAT'CHA THINK, BOSS? THERE'S NO BIZ LIKE SHOW BIZ, RIGHT?
MARVELOUS! HAVEN'T SEEN SUCH GREAT GORE SINCE UNCLE JULIUS WAS OFFED ON THE IDES OF ARCH-MAY! WHY, THIS GIFT OF MINE WILL THUNDER DOWN THE AGES AND ENRICH THE HERITAGE OF WESTERN CIVILIZATION! ESPECIALLY THE YANKS! I'M TELLIN' YOU MARTIALUS, THIS IS RIGHT UP THERE WITH ORGIES, TOGA PARTIES AND MOM'S PIZZA PIE! THUMBS UP! THUMBS UP! OH, YES INDEEDY...
UMBS-THAY UP-PAY!
HEY, MAN, IS THAT YOU TALKIN' PIG LATIN? YOU'RE NOT THAT DRUNK ARE YOU?
LAY OFF THE PILLS, MAN... YER HEARIN' VOICES...
KELLEHER

# A Different View

If oil industry analyses were correct in April, gasoline prices as you read this story are at an all-time high — probably around $1.35 per gallon of regular unleaded. As a result everybody who's been casually dumping $1.10 per gallon fuel into thirsty V-8s is likely searching high and low for a more fuel-efficient vehicle.

Of course the most fuel efficient vehicles are the smaller ones. We've been witnessing downsizing for some time now. In fact the large vehicles for 1985 are smaller outside than the compacts of the 1960s.

**(left)**
**The smallest** Chevy ever, the Sprint, is a harbinger of a new class of mini-cars in the United States. These liter-cars (so called because they have one liter-size engines) require a different outlook on driving than do standard-size vehicles.

**It's hard** for other vehicles to see mini-cars in their rear-view mirrors. So when you're driving a smaller car, move within your lane occasionally (without weaving) to be more visible.

Today we have large, mid-size, compact, sub-compact and mini-compact cars. That's right, mini-compacts. For example, Chevrolet's new Sprint is 20 inches shorter and almost 540 pounds lighter than the company's subcompact Chevette. That makes it nearly four inches shorter than any other car currently sold in the United States.

Of course the big reason for buying mini-compact cars is their good gas mileage. The 1985 Sprint gets an EPA-rated 47 mph city and 53 mph highway.*

*continued*

**Weaving** in and out of traffic in a small car may surprise other motorists and lead to an accident. Don't do it.

**Mileage figures for 1985 cars can only be compared with other 1985 models because of changes in the way the Environmental Protection Agency computes mileage. EPA estimates for all 1985 model automobiles sold in the United States will be reduced 10 percent for city values and 22 percent for highway numbers. For example, the Sprint's EPA-certified city estimates were 53 mpg city and 68 mpg highway before the adjustments.*

continued

Certainly there is concern for the safety of driver and passengers in these mini-cars. To begin with, all cars sold in this country have to pass a 30-mph barrier crash test. In larger cars this is done by having the vehicle's structure collapse, slowly building up the G-forces. For mini-cars, the final G-load isn't any higher, but it builds up faster because there isn't that much room for collapsing.

The other side of any safety concern is the individual behind the steering wheel. And smaller cars do present a different view than the older, larger models did.

Most highways were designed for safe stopping and passing with old, standard-size vehicles where the driver's eye-height was about 45 inches above the ground. Driver eye-height for small cars ranges from 36 to 41 inches.

To make up for this lower outlook, small car drivers must pay close attention to traffic and conditions above and around them. You'll notice that we've provided several tips with the photographs on these pages.

However, the most important safety tip is still: Always wear your safety belts. At least half of all the people who die in cars, light trucks and vans would be alive today if they had been wearing safety belts.

**With the lower line** of sight in mini-cars it's more difficult to see overhead traffic signals and around other vehicles. Be alert to this problem and make sure you can see around you.

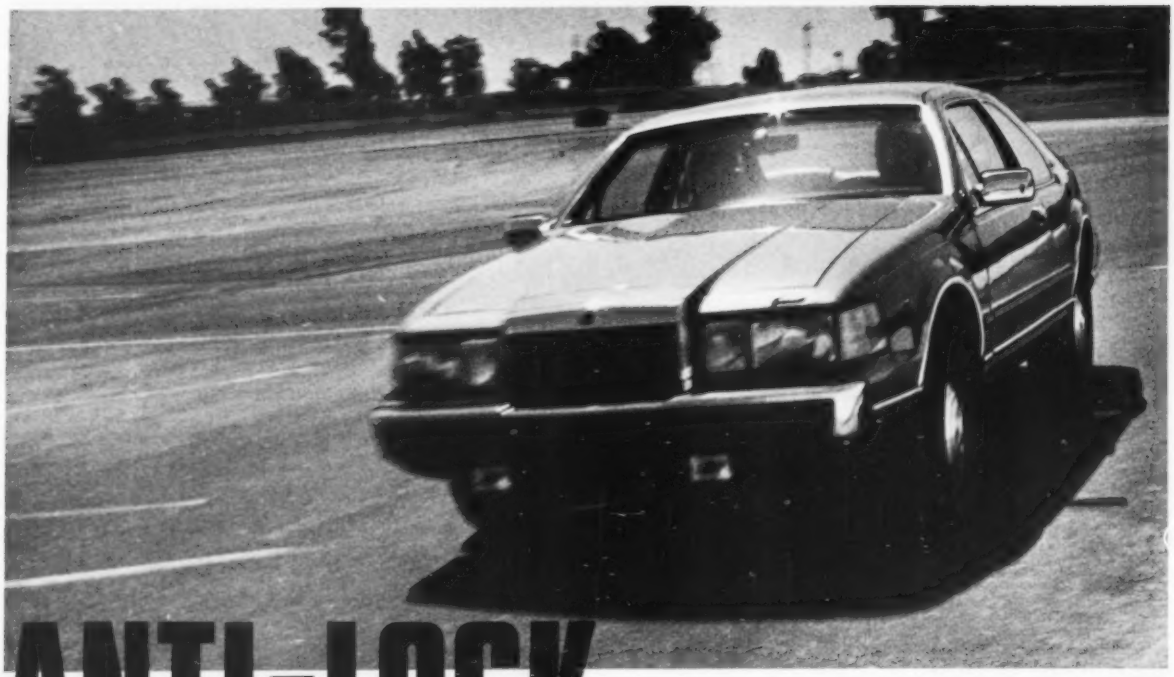
**Mini-cars** such as the Sprint present a different view of the world because their driver's eye-height is from four to nine inches lower than standard.

**Safe** following distance (remember the two second rule) is an important safety factor for all drivers. Time and distance are necessary for a driver to see around the car ahead, to change lanes or to stop if the car ahead brakes suddenly. Don't tailgate.

**Another problem** for small cars is intimidation by larger vehicles. While the new breed of small cars holds the road well, they are still going to be buffeted around when in the wake of a larger vehicle. Take a tip from the motorcyclists and be prepared for the blast.

**When driving** a small car, allow enough room to pass. While the performance of many small cars is spirited, they still accelerate slowly and need more time to make a passing maneuver.

**The new mini-cars** such as the Chevy Sprint have room for four people safely as long as everybody buckles up. There's a decal on the windows of these cars that says: "The Occupants Of This Vehicle Are Expected To Fasten Their Safety Belts." Do it.



# ANTI-LOCK BRAKE SYSTEMS are almost here

Possibly all BMWs, Cadillac Eldorados or Sevilles, Chevrolet Corvettes, some Lincoln Continentals, some Continental Mark VIIs, selected Mercedes-Benz and Porsche 928Ss may have something in common on their American-model 1985s. Besides their $20,000-plus price tags, do you know what it might be? Anti-lock brake systems is the correct answer.

You certainly won't find such systems on 1985 models from American Motors, Jaguar, Honda, Maserati, Mazda and Subaru sold in this country. However, the Mitsubishi Starion SE will continue to be imported with its rear only anti-lock system.

You might ask why it has taken so long for such systems to make their way into American-model cars. After all, the Europeans and Japanese have had them for years. In fact, Bosch ABS units have been installed on more than 400,000 Audi, BMW, Mercedes-Benz, Porsche and Opal cars since 1978.

One of the primary reasons why it has taken so long for the U.S. to get anti-lock systems should be apparent when looking at the list price of the cars that may have such units in 1985. Except for one model that's 1984 base price is $16,430, their sticker prices start at $20,330 and run to $56,800 (and these prices are 1984 base lists *without* the anti-lock brake systems). In a market where the average new 1983 car sold for $10,530, the cars that may have anti-lock brakes in 1985 can't be considered inexpensive.

If you haven't already guessed, anti-lock brake systems are expensive and that limits their application to the up-side of the market. Currently, state-of-the-art European electronical systems cost about $1500. Granted that's not a lot of money for a complex system of wheel sensors, electronic controls and intricate hydraulic valving, but it is a lot of money for a system most drivers will rarely use.

While costs may be the first reason for the United States applications of anti-lock brake systems lagging behind Europe and Japan, there is another reason more pressing for the makers delays in introducing such units here. That reason is: Product liability. Very simply, the laws governing liability in Europe are less strict and far less costly.

A manufacturer could be sued because plaintiffs claim the system didn't work, causing accidents and injuries. There could be suits because the anti-locking brakes worked too well and caused another car that couldn't stop as quickly to rearend the car with the anti-lock system. There could even be suits brought because this safety device wasn't available on the victims' cars and, as a result, they had accidents or more severe injuries from accidents.

So why have anti-locking brakes to begin with? Well, first of all they reduce braking distances. The shortest possible stopping distances are obtained by using the brakes to that point just short of lock-

ing the wheels. Professional drivers can do this by modulating the brakes. An anti-lock system does it by automatically controlling the pressure in the lines to keep the wheels from skidding.

Also, because the wheels continue to turn and don't lock, the car with an anti-locking system stops in a straight line. But more importantly, because the wheels are rolling, the braking car can still be steered; something that can't be done with locked tires.

So, without anti-locking brakes and the skills of a professional driver, most of us are left with the jab and pray method of emergency stopping. We jab at the brake pedal, locking the brakes and pray that we get stopped before we hit whatever we're trying to avoid. Sliding on blocks of screaming rubber instead of slowing on protesting but rolling tires, we fight to keep the car in a straight line. A few of us even know that if we want to steer around the obstacle at the last possible moment we're going to have to let up on the brakes to do so.

However, anti-lock brake systems can take care of all this for us. They stop the car in the least distance, keep it straight while doing so and still allow for steering control.

This is not to say that such systems are perfect. After all, stopping on glare ice is always going to be a problem even with anti-locking brakes. And when it comes to loose gravel or deep, freshly fallen snow, anti-lock brakes don't provide the shortest stopping distances. In these last two cases, the shortest stopping distances are obtained when the locked wheels push a build-up of gravel or snow in front of them. This doesn't happen with anti-locking brakes.

Does the future hold any additional promises? Yes.

For example, Lucas Girling showed their SCS (Stop Control System) anti-locking braking system for front-wheel-drive cars at the 1984 Society of Automotive Engineers Congress and Exposition in Detroit earlier this year. The SCS brings sophisticated wheel-lock control within the scope of front-wheel-drive cars which typically are equipped with "X-split" braking. (All new cars are required to have two separate braking systems. On front-wheel-drive cars, instead of having one system for the front wheels and another for the rear, "X-split" braking means that one system controls the right front and left rear wheels, while the other works the left front and right rear.)

When installed on front-wheel-drive cars, the Lucas Girling SCS offers major safety advantages. The car retains directional stability under normal and emergency braking on road surfaces which have differing adhesion levels, even when these differ from front to rear or left to right. Also, steering control is retained even when braking hard through a bend.

The Lucas Girling SCS consists of two major components. These are modulator units which are operated by belts from the drive shafts on either side of the transmission of the front-wheel-drive arrangement, thus needing no other source of energy to power the anti-lock.

The modulator units consist of an integrated sensor, a pump and the brake pressure modulator itself. The modulator not only individually controls the adjacent front wheel, but also, through an apportioning valve, the diagonally opposite rear wheel.

The sensor determines when the front wheel is approaching a pre-determined locking point. In response to this, the modulator reduces the pressure in the respective brake circuit. When the wheel speeds up again, the pump raises that pressure again in order to bring the braking force back to a maximum level. This compensation takes place many times per second to avoid the wheel locking, thereby maintaining deceleration of the vehicle while providing control and stability.

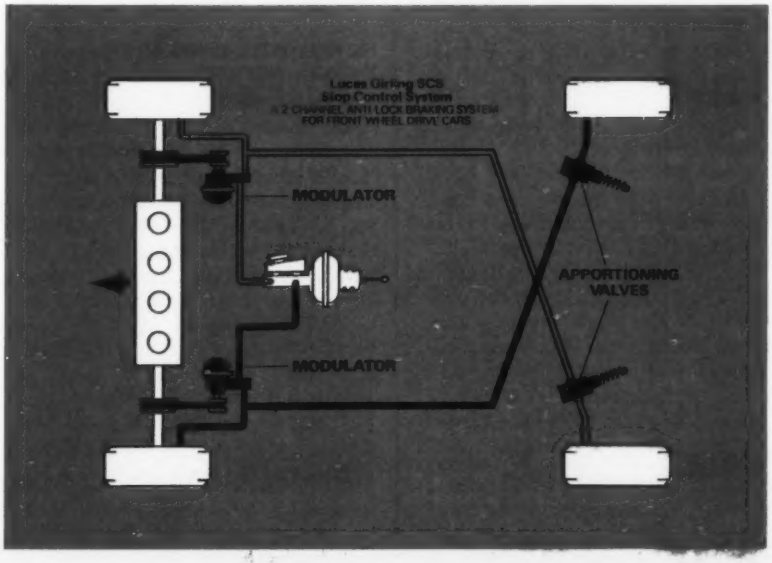
The rear wheel diagonally opposite to each front wheel is also controlled by the modulator through an apportioning valve which distributes the braking load between front and rear wheels. This operates such that when the righthand wheels are running on a dry surface and the lefthand wheels on slippery wet or icy surface, under hard braking the lefthand wheel's modulator would react to reduce the pressure in both the front lefthand and rear righthand brakes, thus ensuring that these wheels remain rolling, maintaining the vehicle's stability.

In case of braking through a bend, when vehicle weight will transfer to the outside wheel and adhesion on the inside wheels will be effectively reduced, the system again operates, since this situation generates similar conditions to those previously described.

In case of an SCS unit failure such as loss of the belt, the brake system works as any normal "X-split" braking system.

Design function and maintenance are notably simple when compared to other known anti-lock brake systems. With an anti-lock braking system which will be as widely installed as this one, it is important that the garage mechanic be able to service it confidently, avoiding the added complication of sophisticated electronic test equipment.

The Lucas Girling SCS low cost anti-lock braking system provides directional control under emergency conditions, combined with high braking performance, and presents a major step forward in increasing safety standards for all road users.



# Timely Topics

### AUTO & TIRE DEALERS OFFER FREE PROGRAM ON CHILD SAFETY SEATS, ADULT SEAT BELTS

Although 43 states now have laws requiring small children to be placed in safety seats while riding in a car, safety authorities are concerned that too many are being improperly buckled up. At the same time, many adults refuse to wear seat belts, increasing their chances of injury or death in a crash.

A new program offered by 8,000 car, truck tire and auto service dealers across the country is meant to help encourage use of seat belts and child safety seats by explaining how these systems save lives.

Developed by the Dealers Safety and Mobility Council, "Buckle Up With Confidence" is a 10-minute audio-visual presentation which dealers loan to local groups and schools free of charge.

It not only demonstrates how to properly protect infants and small children when they ride, but also shows how the car's seat belts work and how they protect older children and adults from serious injury and death.

"Buckle Up With Confidence" explains how belts lock on impact. In a panic stop or crash, modern belt systems "sense" that they should hold a person firmly and safely in his or her seat.

Besides the audio-visual presentation, "Buckle Up With Confidence" includes materials designed to encourage groups and classes to discuss the value of using occupant restraints.

Most participating members of the DSMC also offer free presentations on drunk driving, drugs and driving and how to maintain cars for safer operation.

For names of participating dealers in local areas, teachers and program chairpersons of men's and women's clubs, church groups, youth groups and similar community organizations are invited to contact the Dealers Safety and Mobility Council, 5th Floor, 1776 Massachusetts Avenue, N.W., Washington, D.C., 20036. Phone (202) 857-1251.

### AIR BAGS, PRO AND CON

At the annual shareholder's meeting, Vice Chairman Howard H. Kehrl said General Motors has been working on air bags for 20 years. "We once were very enthused about them. We made them and tried to sell them (as options). We came to the conclusion that air bags are not the answer to reducing highway deaths. Seat belts are more effective."

Meantime, General Motors' free one-year $10,000 accident insurance certificate for new-car buyers who die while wearing seat belts was criticized by Ralph Nader and the National Insurance Consumer Organization.

Nader said, "If the threat of death itself only gets 15 percent of the people in this country to wear seat belts, the possibility of someone's family getting a few thousand dollars will have marginal, if any, effect in terms of getting people to buckle up." He called on GM to end its opposition to passive restraints.

### TREND TO FIVE-YEAR AUTO LOANS?

Lenders are beginning to offer five-year auto loans to hold down the price of monthly loan payments. Most auto loans today are still made for four years. The number of lenders offering the five-year loans are limited and few appear to be pushing the five-year term. The depreciation on a five year old car makes them poor collateral and takes the car buyer out of the new car loan market for too long. (AIC Newsletter)

### HONDA WILL CORRECT DESIGN DEFECT

If you own a 1979 Honda Accord or Civic, you may be having a problem with rust perforation on your front bumper. You're in luck, because Honda is participating in a voluntary program to correct the rusting, since it is caused by a design defect which does not provide adequate drainage around the front bumper. Owners who have had the deficiency corrected before Feb. 15, 1984, and have paid repair bills, will receive reimbursement upon submission of proof to American Honda Motor Company, Inc., P.O. Box 80, Gardena, CA 90247. Application forms can be obtained from Honda Dealers. Honda Dealers will give you a free inspection, even if the vehicle does not appear to have rust. This program expires Aug. 15, 1984.

### MINIVANS SEEN AS THREAT TO WAGONS

Garageable minivans are becoming so popular that it may spell the end of the station wagon as a family vehicle, according to J.D. Power & Associates, an automotive market research firm.

Calling station wagons "an endangered species," the Power Newsletter says that "minivans and station wagons clearly will be competing for the same buyers and the stage is set for a major defection of station wagon owners/intenders to minivans.

### NUMBERS OF AUTO PARTS STORES UP

Automotive Parts and Accessories Association's (APAA) recent study "The Retail Distribution of Automotive Products" recorded 38,000 auto parts stores in the U.S. in 1983, an increase of nearly 10,000 auto parts stores in the three years since the study was first conducted in 1980. The number of service stations continues to decline. The APAA found they decreased from 158,000 to 136,000 during the three-year period. The number of new car dealerships, tire stores and variety stores handling automotive products also declined. Gains were made in the number of specialty repair outlets, independent garages and drugstores handling automotive products. Discount, hardware and grocery stores also recorded slight increases in the number handling automotive lines. The department store category remained relatively stable despite J.C. Penney's decision to drop out of automotive servicing. (AIC Newsletter)

### COMMON FACTORS

During the first three months of 1984, nine Air Force members lost their lives in motorcycle accidents. In seven of these accidents, the motorcycle operator was at fault. In both the remaining accidents, the motorcycle operator shared the blame with the other vehicle driver. Alcohol was a contributing factor in six of the accidents with BAC's of .067, .192, .200, .218, .260 and .270.

# TRUE ACCIDENTS

**Following are a few reports of accidents involving Air Force members. We have removed names and references to dates and places.**

### ALCOHOL AND SPEED

The member arrived at his duty section in the hospital at approximately 0010. Co-workers observed that the airman had apparently been drinking and appeared to be highly intoxicated. The member departed the hospital at approximately 0030 in a highly emotional state. He drove east on a road at a high speed and attempted to pass another vehicle. He apparently lost control of the car at that point, going into the opposite lane. The member's car left the road and turned over four times. The member was thrown from the vehicle approximately 128 feet. Witnesses assisted the member and notified the hospital personnel immediately. The emergency unit was dispatched and the member was transported to the hospital, where he was declared DOA (dead on arrival) at 0106.

### MORE ALCOHOL AND SPEED

The operator and passenger had consumed a substantial amount of alcoholic beverages prior to the mishap. They were on a 400 cc motorcycle northbound on a four lane divided highway, traveling at an estimated speed of 117 mph. The operator allowed the vehicle to drift left and contact the center median. The jolt of the impact combined with the forward momentum of the vehicle caused the passenger's neck to whiplash back into the sissy bar/backrest, resulting in an instantaneous fracture of the neck. He was subsequently ejected from the motorcycle and landed approximately 136 feet from the first point of impact. The operator remained on the motorcycle for an additional 220 feet after the initial impact and was finally ejected from the motorcycle when it contacted the center median again. He suffered a fractured left wrist and was treated and released. The passenger was pronounced dead on arrival at the medical center. Autopsy results indicated that the cause of death was a severed spinal cord. Further investigation revealed that the operator had a Blood Alcohol Level of .152 and the passenger had a Blood Alcohol Level of .179. The operator had several years of motorcycle riding experience but had only been licensed to operate at the base location for a month. Both individuals were wearing approved motorcycle helmets at the time of the mishap.

### WRONG WAY, ALCOHOL

An airman was on a highway traveling southbound on the northbound side for approximately one mile when she struck another vehicle head-on. The operator was pronounced dead at the scene due to massive head injuries. Alcohol was a factor in the mishap. A blood alcohol test was conducted with results of .26. Indications are she was unaware of her surroundings or was semiconscious due to alcohol.

### RACING

The operator joined an impromptu party of people gathered in a boat dock parking lot at a lake. Police reports indicate he had been drinking with the crowd and solicited a motorcycle race with others in the gathering. He was refused. He drove away from the area via a service road. He apparently turned around after a short distance and raced back to the parking lot. He was heard approaching under heavy acceleration. The vehicle left sliding marks for 210 feet prior to impact with a sunken cement boundary post. The operator left the vehicle and the motorcycle continued another 68 feet, landing in an inlet stream. The impact with the cement post caused massive body damage and he died soon after arrival at a local hospital.

He had only recently purchased the motorcycle, which was temporarily registered on base. He had not attended Course VII or a hands-on training course. Witnesses at the party said he was not intoxicated, however, BAC was .07.

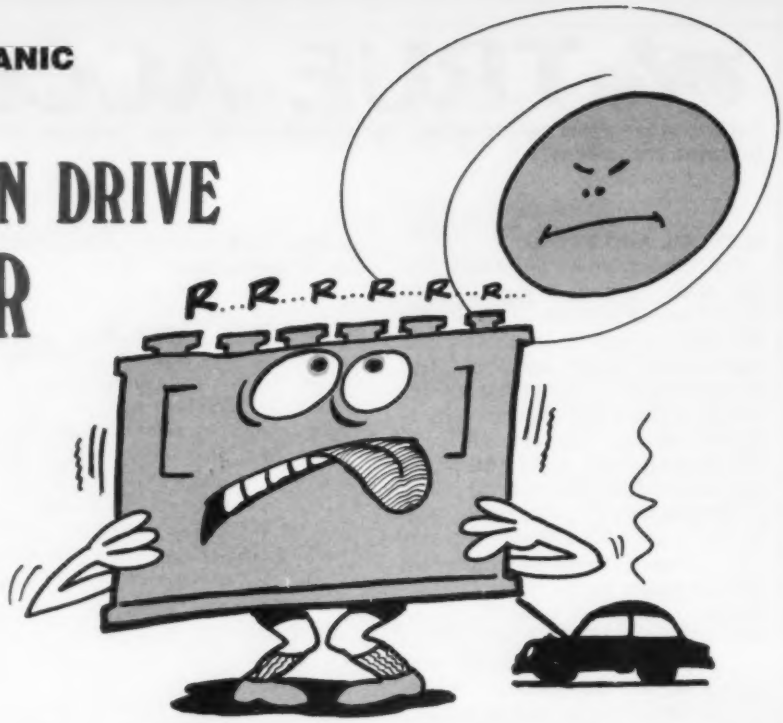
### SPEED, NO BELTS

At approximately 0130, operator and passenger were traveling west on a street at a high speed. The operator entered an on-ramp to an interstate highway from the street. The on-ramp is an S-curve. The operator was negotiating the first part of the S-curve, which is a right hand curve, when the right front fender of the vehicle came in contact with the cement guard wall. At this time the passenger was ejected from the vehicle through the open passenger door window. Blood stains on the guard wall indicate that the passenger's body was in contact with the wall for approximately 20 feet before going over the guard wall and falling 50 feet into the eastbound lane of the street.

### INNOCENT VICTIM

Member was traveling west on a highway, alone on a motorcycle, when he was struck from the rear by a four-wheeled vehicle operated by a non-Air Force civilian. Operator entered the westbound right lane of a four-lane divided highway from a crossing. He traveled approximately 224 feet west when vehicle number two, traveling westbound, struck vehicle number one from the rear. At impact, vehicle number one traveled approximately 404 feet, then left the paved roadway and traveled another 150 feet. At impact vehicle number two traveled approximately 138 feet before leaving the roadway, then traveled another 293 feet. The vehicle left approximately 61 feet of skid marks prior to impact and 332 feet of solid 4-wheel skid marks after impact. Subsequent investigation revealed operator of vehicle number two was legally drunk, with a Blood Alcohol Content of .18. The minimum speed of the four-wheeled vehicle was estimated in excess of 75 mph. Operator number one had not been drinking. Interviews with frends and co-workers revealed no emotional factors that could have contributed to the mishap. Operator number one had completed Motorcycle Safety Foundation's Motorcycle Rider Course (MRC) and had a temporary state motorcycle driver's license. The operator had operated a motorcycle for approximately two months. An approved motorcycle helmet and face shield were worn. The operator was relieved from work at approximately 0050. It was not unusual for him to ride the motorcycle off base after work at that hour to eat. Subsequent investigation disclosed the transmission was in third gear at impact, which places the motorcycle speed at impact between 30 and 40 mph. The motorcycle headlights were found on high beam. Operator number one's record reflected no previous traffic violations. Operator of vehicle number two was charged with driving while intoxicated (DWI) and vehicular homicide.

# SUMMER CAN DRIVE THE POWER OUT OF YOUR BATTERY



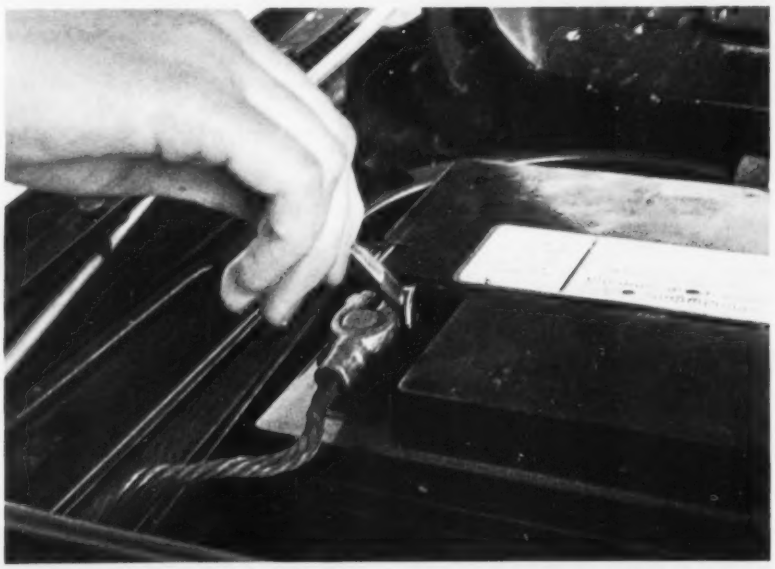

Nothing is more frustrating to a motorist than a car that won't start. And this seems to happen most frequently when the temperature drops and the winds howl.

Most of us are not aware of any developing battery problem in the summer because it doesn't take as much power to start an engine in warm weather. But at zero degrees Fahrenheit, even a new, fully charged battery has only 40 percent of its starting power. This, coupled with a cold hard-to-start engine, may lead to trouble if the battery has been poorly maintained.

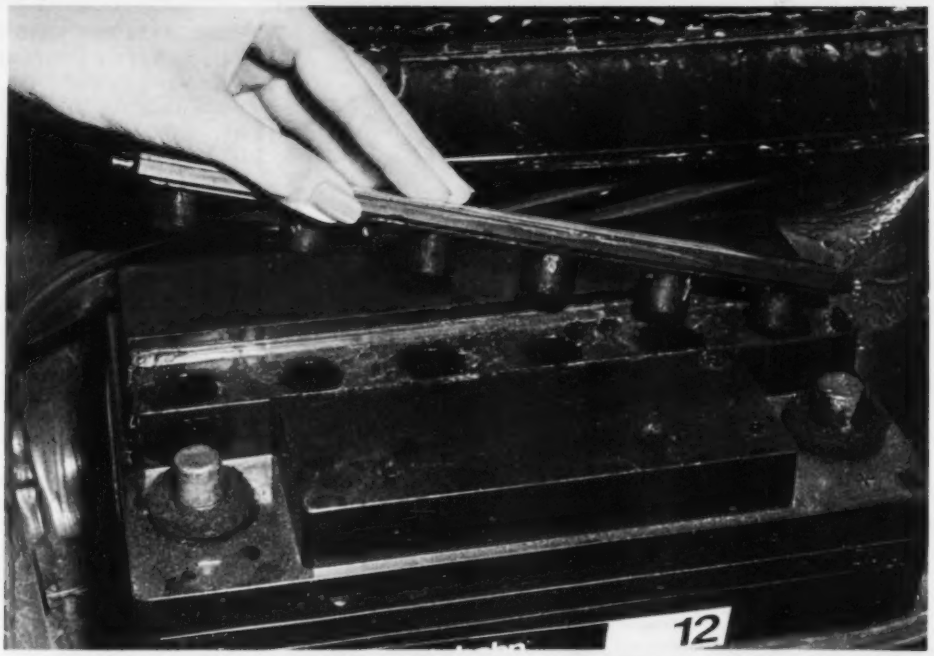
Hot weather actually causes the water portion of the electrolyte (a water/acid solution) in a battery to evaporate more rapidly and that can promote formation of sulphates on exposed battery plates. Hard sulphates can grow between plates, causing a short circuit and shortening the life of the battery. And charging the battery will not always get rid of these sulphates.

Most maintenance-free batteries minimize this problem. But if you are one of the millions of car owners who have the conventional type of battery with filler openings on top, here are some easy to follow maintenance tips.

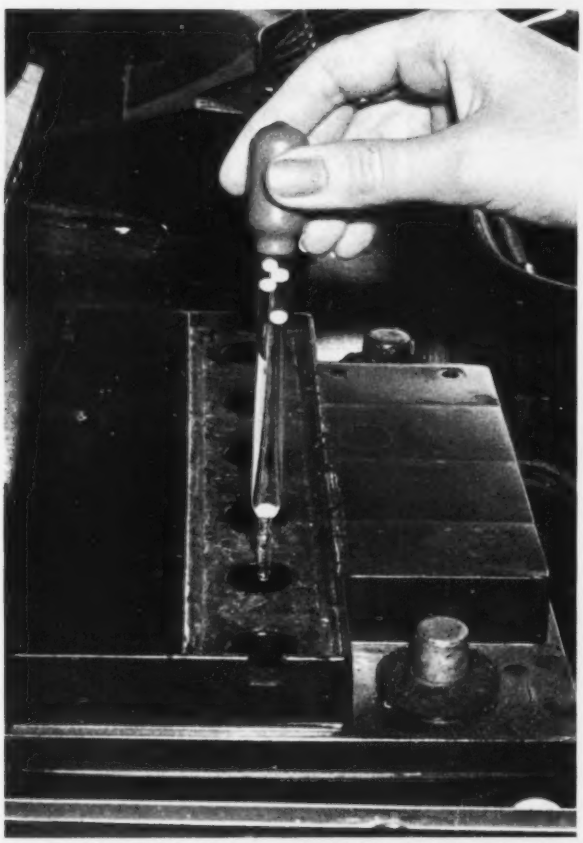
**Before** doing any work on or near your battery, remove all jewelry including watches.



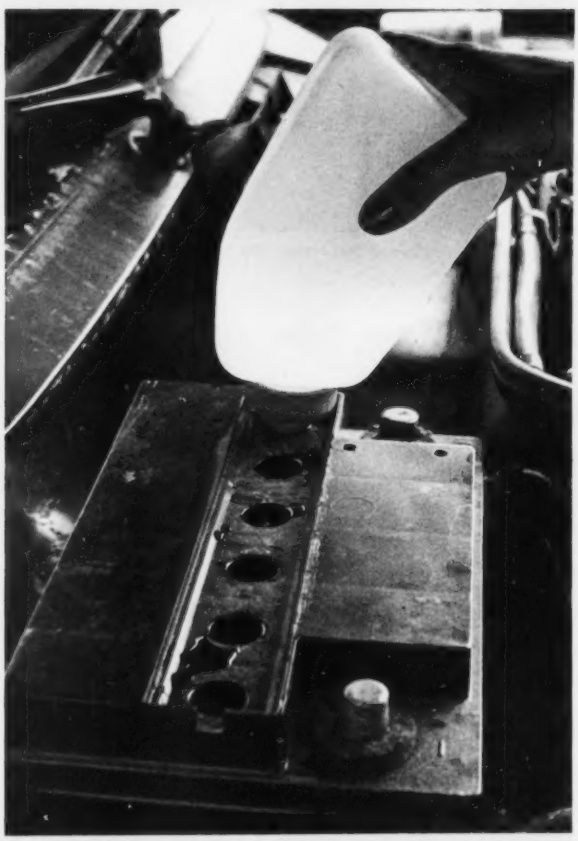
**Then disconnect** both battery cables, doing the ground (usually negative) first.




**Although** this appeared to be a maintenance free battery, as you can see it is possible to get to the cells.

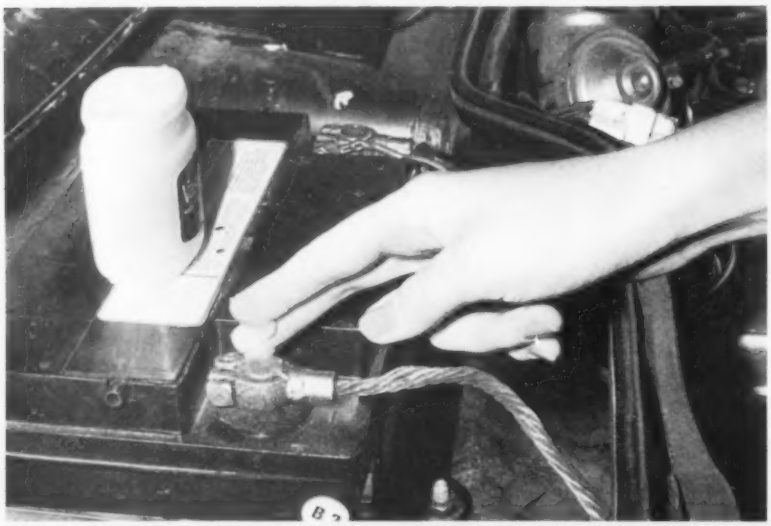


**Four floating balls** in this inexpensive (99¢) battery hydrometer tell you that the cell's fluid is 100 percent charged.



**Automatic fillers** such as this guarantee that each cell is filled to the proper level.

**This simple wire brush** tool makes quick and easy work of cleaning the battery terminals and cable connections.



**After** reattaching the cables, apply a layer of petroleum jeliy to help prevent corrosion and reduce the need for frequent scrubbing.

**Check the fluid level:** Maintain the fluid level in the battery approximately a quarter-inch above the tops of the plates, or at the level indicated. If this level drops below the top of the plates, fill the cells with colorless, clean water. This is important because water containing a high level of minerals can reduce battery life and performance. Actually, any water that you can drink is probably all right to put in your battery.

**Keep the battery clean:** Moisture, dirt and corrosion can block the flow of current and provide a path that allows energy to escape. Periodic washings with a mild solution of water and baking soda are recommended, along with removal of any corrosion accumulation.

Corrosion is best removed with a wire brush. Inexpensive post and clamp brushes are available which simplify the job of keeping terminal connections clean and corrosion-free. Application of petroleum jelly or some other non-metallic grease to the terminals (after the cables have been connected) will help prevent corrosion and reduce the need for frequent scrubbing.

**Test the state of charge:** Test the battery's state of charge with an inexpensive battery hydrometer that can be found at most automotive and hardware stores. It's easy to use. Follow directions and draw some of the fluid from the battery into the hydrometer's chamber and read the specific gravity, or acid concentration, of the fluid. A battery which registers less than 50 percent of full charge should be recharged with a battery charger. Slow-charging overnight is recommended to bring a battery up to full capacity, but quick-charging may be enough to get a car started and moving again.

An undercharged battery could also be a symptom of a faulty voltage regulator, a slipping fan belt or short-distance cold-weather driving habits, none of which permits adequate recharging of the battery from the car's charging system. If a battery continues to lose its capacity after proper recharging, these problem areas should be investigated.

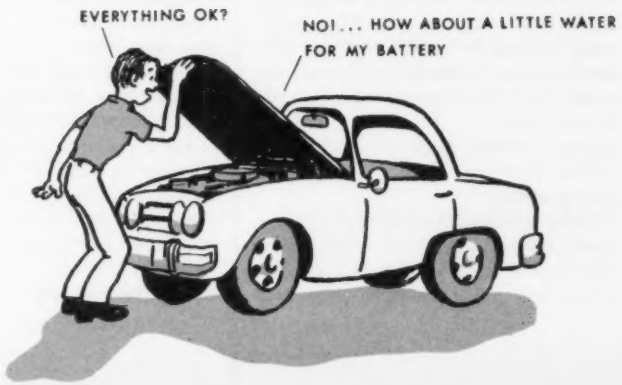
Regardless of which kind of battery you have in your car, you should still lift the hood and check it once in a while. Make sure it's held securely. Look for corrosion on the terminals. And, if you have a conventional battery, check the fluid levels in each of the battery's cells.

This small amount of time and effort may prolong the useful life of your battery and assure its maximum starting performance next winter.

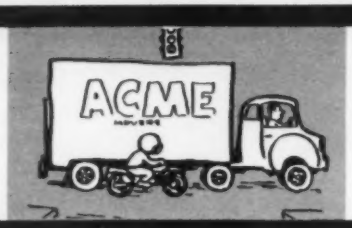
continued

There is a new battery available that does everything except install itself. It comes complete with an underdash-mounted electronic monitor which keeps the motorist abreast of the operating condition of both the battery and charging system. Lights on the monitor indicate "overcharge" and "undercharge" as well as the state of charge and normal charging system operation. The driver is even alerted when parking or headlights are left on after the engine is turned off. Also new is the connector system which virtually eliminates the problem of corrosion. Designed to fit most gas-engine cars and light trucks built since 1970, the battery has a full one year replacement warranty to cover electrical failure due to defects in materials or workmanship, followed by a limited, time-prorated five year warranty.

**Even if** you have one of the many types of maintenance-free batteries available, you should raise the hood and check it once in a while. Make sure it's held securely and look for corrosion on the terminals.



# BACKfire
## LETTERS to the EDITOR



### MOTORCYCLE SAFETY

After reading the April 84 issue of Driver, I would like to make a few comments on your article "Look for Them." First off, that is probably one of the best motorcycle safety articles your magazine has ever published. Not only did it teach automobile drivers to have a little respect for motorcyclists but it managed to avoid one of the Air Force Driver Safety Programs main faults, prejudice, by presenting both sides of the question.

By prejudice I mean the unalterable fact that, although the military spends millions of dollars on traffic safety every year, the program does not teach auto drivers how to drive around motorcycles. For example, following distances should be a little longer, take-offs from intersections should be more carefully planned, and left turns should be checked twice. Just a few simple facts explained in any traffic safety course could make a significant difference in lives.

There is a reverse side to that statement, though. Bikers should also know how to make themselves more visible to cars. Since your article covered most of the useful techniques for today, I'll only mention the few your article didn't cover. First, when riding behind a car, try to position yourself so the driver's face is visible in his side view mirror as this will ensure that he can see you. Also, when going through an intersection try to ride alongside a car or truck, if possible. This method will effectively increase the visible mass seen from the intersection. If no cars are available, flash your high beams or honk your horn to warn other cars of your presence.

As far as helmets go, I strongly recommend the use of them. If nothing else, they keep wind out of your face, as well as bugs and gravel that many larger cars throw from their tires. Gravel, insects or the like can be quite painful, if not fatal.

Once again, congratulations on a fantastic, well-written article. Keep up the good work.

**A1C Sean P. Kirkwood, USAF**
**Kelly AFB, TX 78243**

*Thanks for your kind words. The best news is that in the last few years AF four-wheelers have not had any accidents with two-wheelers. The military cyclists' problems are on the public roads which they share with drivers who have had little or no traffic safety education.*

### PASSENGERS ARE VALUED ASSETS

I just finished reading "There is No Such Thing as a Motorcycle Passenger" and found it to be an extremely informative article. I was, however, surprised to read the comment that four wheel passengers have only to "hop in, buckle up and away you go." Nothing can be further from the truth.

My wife, who is normally my front seat passenger, is also my co-pilot, navigator, and lookout. On more occasions than I care to admit, she has seen children afoot and on vehicles of every description and warned me of their presence long before I have seen them. She guides me through unfamiliar streets in strange cities and navigates us on cross country trips with maps and atlas close at hand. And on those long and boring stretches of interstate she is the intelligent person I need to stay alert. She also insures that she has an opportunity to rest so that before fatigue sets in for me, she will be in condition to take over the controls of our machine.

A passenger is and should be an active participant, not a distraction. Those drivers who think of their passengers as a nag or a hindrance should reassess their thinking and insure that the passenger becomes a valued asset when traveling.

**TSgt Allyn D. Braun, USAF**
**Laconia, NH 03246**

### SEATBELT BELIEVER

I do enjoy reading your magazine. I strongly believe in seat belts and have used them in every car that had them. I rolled a car in Germany three times and ended up with some broken ribs only because the shoulder harness wasn't adjusted for me. My wife and son received no injuries as they were strapped in correctly. I hope all states go to mandatory seat belts and insurance companies give less compensation to vehicle accident victims that refuse to wear them. I am tired of paying higher insurance rates because people end up with injuries they wouldn't have had if they wore their seat belts.

**Henry H. Timm**
**Greeley, CO 80631**

### WHAT DO YOU THINK?

I have enjoyed reading DRIVER and I think you print some very interesting articles. I know one of your goals is to prevent highway accidents with such articles as "True Accidents" and "Ignorant or Stupid" (May 1984). I am a volunteer firefighter and my experiences are very similar to those of SSgt Coons. I wish some of my co-workers who don't wear seatbelts could respond with me to

some vehicle rescue calls. I've talked to my co-workers about it, and I don't think they understand that it could happen to them. Besides, that's the type of person who doesn't read DRIVER anyway.

What I suggest is to include some "real life" automobile accident photographs in each issue of your magazine. The advantages of this would be:

(1) Get the attention of the non-readers.

(2) Show what the human body can do to the inside of a car during a sudden stop. (Sheared off gear shifts, crushed dashboards, bent steering wheels, etc.)

(3) Show examples of cars with heavy damage in which seatbelt wearing occupants survived with little or no injury.

I think more needs to be done to educate people on this subject. To see an accident through the eyes of an emergency worker might wake a lot of folks up. It might make them think about accidents. A good thought to have when driving.

**TSgt John McCoy, USAFR**
**Dover AFB, DE 19901**

*What do other readers think? Do you believe pictures of real accidents — we have plenty — would make readers more aware of the dangers? Please let us know your opinions.*

**HELMET TESTING**

As a motorcycle operator, I read with interest the article about Helmet Testing by Harry Hurt in the December 1983 issue.

Without having to check every motorcycle shop and every single helmet that they might carry, can you not list the recommended helmets instead? A grouping of those helmets which meet the safety standards that were mentioned in the article and that offer the most protection would be most beneficial.

**Lt Chris M. Handley**
**Omaha, NE 68106**

*We're still waiting for the report to be issued. When it is, we'll let you know how you can obtain a copy.*

**UNCONSCIONABLE IS BETTER WORD**

Concerning the article "Ignorant or Stupid?" (May 84); to SSgt Coons — perhaps a better word (by definition) for your title would be UNCONSCIONABLE. Definition from the same dictionary:

*UNCONSCIONABLE* (1) Not guided by conscience; **unscrupulous.* (2) Not in accordance with what is *just* or *reasonable.* (3) Excessive; extortionate.

And, for those who *still* don't understand:

**UNSCRUPULOUS* Conscienceless; *without principle.*

This is how a mother and/or father thinks after they've heard someone (drunk) just killed or maimed their child, because he/she wouldn't call a taxi. *Nonetheless,* thank you for your article! It (along with others from DRIVER) has been sent to every member of my family. Unfortunately, this type of magazine isn't readily available to the general public — *YET!*

**OS2 M.V. Cooper, USN**
**NAVBASE Charleston, SC 29408**

**SAVED BY BUCKLING UP**

Two young airmen departed Fairbanks, Alaska, southbound for Eielson Air Force Base. Just prior to entering the approach ramp to the Richardson Highway the driver lost control of the vehicle. The car left the road at approximately 40 mph and began rolling on the right shoulder. When the car came to rest it had rolled once, landing upright, and was facing northbound. Both the driver and the passenger were wearing seatbelts and were not injured in the accident. The auto was totalled. The driver indicated that he buckles his seatbelt out of force of habit. (Eielson has a strictly enforced seatbelt policy.)

There are several things to be learned from this accident. One, the seatbelts probably kept the airmen from being thrown from the vehicle, greatly decreasing the chances of serious injury. Two, a strong base seatbelt policy helped to reinforce a good habit — wearing of seatbelts. Third, and most important, two airmen are at work today because they took those few seconds to buckle up.

**2nd Lt Robert W. Keating, USAF**
**Eielson AFB, AK 99702**

**GIRLS OR WOMEN?**

This letter is in response to the May, 1984, issue of DRIVER. Page 20 includes a report of an accident which was titled "Hanging Outside Car." In this report, several references are made to "girls" being in a bar and as occupants of vehicles. How old were they? Nine or ten?

If they were adult women, perhaps you could, in future issues, do what an editor does best: edit.

**Frances A. Sherertz**
**Herndon, VA 22071**

*Some bad habits surely die hard. These "girls" were indeed women and that's what we should have called them. Thanks for the reminder.*


☆U.S. GOVERNMENT PRINTING OFFICE: 1984 783—026/18

# THE PERSUADER

This device, a seatbelt demonstrator, does an effective job of convincing people of the wisdom of wearing their automobile passenger restraints. Though it only moves at around five miles per hour, the sudden stop at the end of the rails is enough to give its passenger a good jolt. In this case, the passenger is professional race car driver Lyn St. James, already a true believer in the advisability of buckling up.